WHAT IS CLAIMED IS:

1. A wafer oxidation system comprising:

a stage having a surface;

a material mounted on said stage, wherein said material has a thermal conductivity of at least about 100 watts/K/meter; and

an oxidizing system operable to selectively oxidize semiconductor material in said wafer to form a current confinement structure in said semiconductor material.

2. The system of Claim 1, wherein said thermally conductive material consists essentially of graphite.

3. The system of Claim 2, wherein said thermally conductive material has a thickness of approximately one millimeter.

4. The system of Claim 1, wherein said thermally conductive material consists essentially of copper.

5. The system of Claim 1, wherein said thermally conductive material consists essentially of silicon carbide.

6. The system of Claim 1, wherein said thermally conductive material comprises a silicon substrate coated with graphite, copper or silicon carbide.

7. A wafer oxidation system for selectively oxidizing an Aluminum containing semiconductor layer of a semiconductor wafer to create a current confinement structure, the system comprising:

an oxidation reactor comprising a wafer stage having a top surface with a thermal conductivity of at least 100 watts/K/meter, wherein said semiconductor

wafer is supported by said top surface of said wafer stage, whereby said oxidation reactor is operable to selectively oxidize said Aluminum containing layer to create an Aluminum oxidized area and an Aluminum non-oxidized area such that said Aluminum oxidized area is substantially uniformly disposed around the perimeter of said Aluminum non-oxidized area.

8. A wafer oxidation system comprising:

an oxidation reactor, and

a wafer stage comprising a surface having a thermal conductivity equal to or higher than 100 watts/K/meter.

9. The system of Claim 8, wherein said surface is a top surface of said wafer stage.

10. The system of Claim 8, wherein said surface is a top surface of a disc mounted on said wafer stage.

11. The system of Claim 8, wherein said surface consists essentially of graphite, copper, or silicon carbide.

12. A wafer oxidation system comprising:

a source of oxidizer;

a layer having a thermal conductivity of at least 100 watts/K/meter for supporting said wafer during oxidation.

13. A semiconductor wafer made with a method comprising:

mounting a thermally conductive material having a thermal conductivity of at least 100 watts/K/meter on a wafer stage in an oxidation chamber;

mounting said semiconductor wafer on said thermally conductive material;

dispensing a mixture of water vapor and nitrogen gas in to said oxidation chamber so that said semiconductor wafer is exposed to a uniform spray of said mixture.

14. The wafer of Claim 13, wherein said thermally conductive material consists essentially of graphite.

15. The wafer of Claim 14, wherein said thermally conductive material has a thickness of approximately one millimeter.

16. The wafer of Claim 13, wherein said thermally conductive material consists essentially of copper.

17. The wafer of Claim 13, wherein said thermally conductive material consists essentially of silicon carbide.

18. A method of forming a semiconductor wafer having an oxidized portion and a non-oxidized portion, the method comprising:

placing said semiconductor wafer on a thermally conductive material in an oxidation reactor having a thermal conductivity of at least about 100 watts/K/meter;

exposing said semiconductor wafer to an oxidizing mixture.

19. The method of Claim 18, wherein said oxidizing mixture comprises a mixture of heated water vapor and nitrogen gas.

20. The method of Claim 19, wherein said oxidizing mixture is dispensed at least a rate of about 20 grams per hour.

21. The method of Claim 18, further comprising:

rotating said thermally conductive material at a rate of approximately ten rotations per minute.

22. A method of forming a semiconductor laser having a current confinement structure comprising an oxidized portion and a non-oxidized portion, the method comprising:

placing said semiconductor laser on a wafer stage in an oxidation reactor, at least a portion of said wafer stage having a thermal conductivity of at least about 100 watts/K/meter;

exposing said semiconductor laser to an oxidizing mixture.

23. A method of making a semiconductor laser comprising:

forming a layered structure including a lower reflecting mirror, an active layer, and an upper reflecting mirror;

mounting said layered structure on a wafer stage in an oxidation reactor having a thermal conductivity of at least about 100 watts/K/meter;

oxidizing a portion of said layered structure in said oxidation reactor forming a current confinement area including an inner non-oxidized portion and an outer oxidized portion, wherein the radial width of said oxidized portion is circumferentially uniform within about ten percent of the average radial width of said outer oxidized portion.

24. The method of Claim 23, wherein said wafer stage consists essentially of one or more of graphite, copper, or silicon carbide.

25. A method for forming a current confinement structure on a semiconductor wafer comprising:

mounting a wafer to be partially oxidized on a wafer stage having a thermal conductivity of at least about 100 watts/K/meter;

heating said wafer to a substantially uniform temperature; and

exposing said wafer to an oxidizing agent so as to oxidize said wafer such that the radial width of an oxidized portion of said wafer is circumferentially uniform.

26. A method of selectively oxidizing a semiconductor wafer comprising:

mounting a thermally conductive material having a thermal conductivity of at least 100 watts/K/meter on a wafer stage in an oxidation container;

mounting said semiconductor wafer on said thermally conductive material;

dispensing a mixture of water vapor and nitrogen gas in to said oxidation container so that said semiconductor wafer is exposed to a uniform spray of said mixture.

27. An oxidizing apparatus comprising:

support means for maintaining said wafer at a substantially uniform temperature.

28. A wafer oxidation system comprising:

an oxidation reactor, and

a wafer stage rotatably received therein and having a top surface for mounting thereon an object wafer, said wafer stage having a heater therein and mounting thereon a heat conductive disk having a diameter larger than a diameter of the object wafer, said heat conductive disk having a thermal conductivity equal

to or higher than 100 watts/K/meter and being sandwiched between said object wafer and said top surface.

29. The wafer oxidation system as defined in claim 28, wherein said heat conductive disk includes graphite, silicon carbide, copper or silicon as a main component thereof.

30. A wafer oxidation system comprising:

an oxidation reactor, and

a wafer stage rotatably received therein and having a top surface for mounting thereon an object wafer, said wafer stage having a heater therein, said top surface having a thermal conductivity equal to or higher than 100 watts/K/meter.

31. The wafer oxidation system as defined in claim 30, wherein said top surface includes graphite, silicon carbide, copper or silicon as a main component thereof.

32. A method comprising:

forming an Al-containing semiconductor layer overlying a substrate;

selectively oxidizing said Al-containing semiconductor layer by using a heater installed in a wafer stage to form an Al-oxidized area and an Al-nonoxidized area in said Al-containing semiconductor layer, said wafer stage mounting thereon a heat conductive disk having a thermal conductivity equal to or higher than 100 watts/K/meter and sandwiched between the object wafer and said wafer stage; and

forming a semiconductor device having a current confinement structure formed by said Al-oxidized area and said Al-nonoxidized area.